

SERVICE MANUAL

MD MECHANISM

BASIC MD MECHANISM : ZZG-1 A
7ZG-3 A1

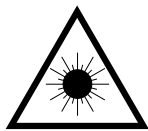
| TYPE |
|------|
| A |
| YA |

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

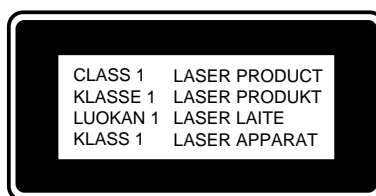
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

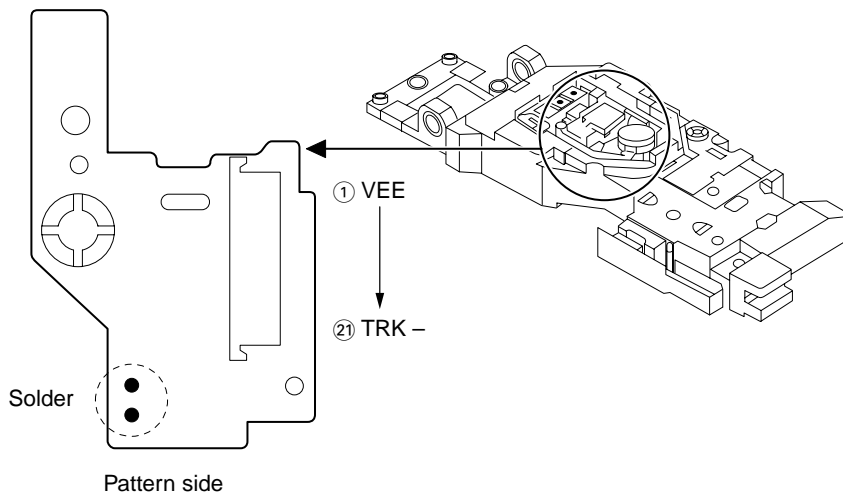


Precaution to replace Optical block (KMS-260B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

- 1) After the connection, remove solder shown in the right figure.

MD PICKUP Assy P.C.B.



ELECTRICAL MAIN PARTS LIST

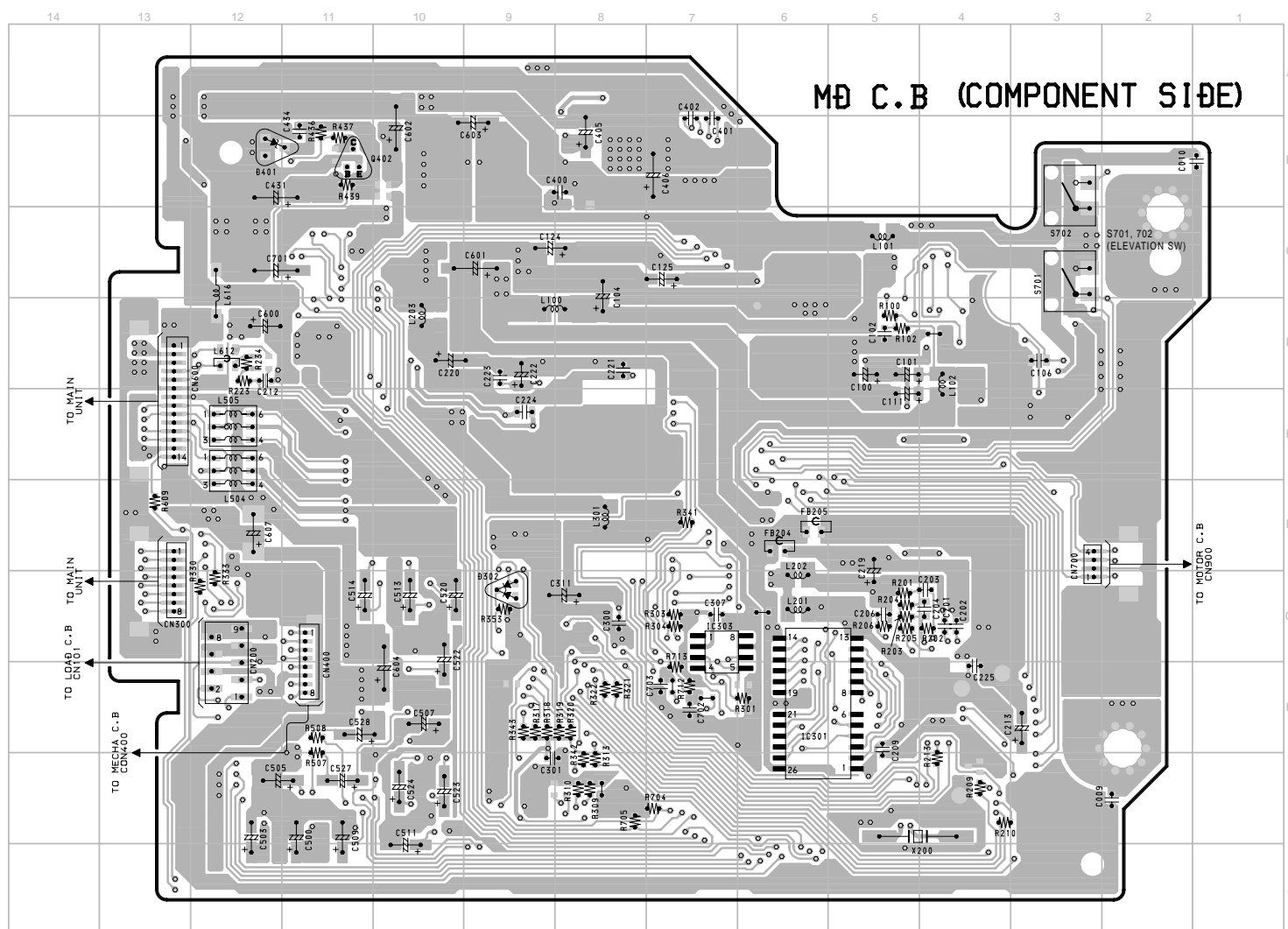
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO | PART NO. | KANRI NO. | DESCRIPTION | REF. NO | PART NO. | KANRI NO. | DESCRIPTION |
|------------|----------|-----------|-------------|---------|----------------|-----------|-------------------------|
| IC | | | | C213 | 87-010-662-080 | | C-CAP,E 22-6.3 |
| | | | | C214 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C217 | 87-012-188-080 | | C-CAP,U 47P-50 CH |
| | | | | C218 | 87-012-172-080 | | CAPACITOR CHIP U 10P CH |
| | | | | C219 | 87-A11-241-080 | | C-CAP,TN 22-6.3 M F93 A |
| | | | | C220 | 87-010-662-080 | | C-CAP,E 22-6.3 |
| | | | | C221 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C222 | 87-016-444-080 | | C-CAP,TN 47-10 F95E |
| | | | | C223 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C224 | 87-A10-685-080 | | C-CAP,S 470P-100 J CH |
| | | | | C225 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C226 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C227 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C228 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C229 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C232 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C233 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C237 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C300 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C301 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| TRANSISTOR | | | | C302 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C305 | 87-A11-067-080 | | C-CAP,S 1-10 K B |
| | | | | C307 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C308 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| DIODE | | | | C311 | 87-010-662-080 | | C-CAP,E 22-6.3 |
| | | | | C312 | 87-012-195-080 | | C-CAP,U 100P-50CH |
| | | | | C321 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C322 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C323 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C324 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| MD C.B | | | | C325 | 87-012-274-080 | | CHIP CAP,U 1000P-50B |
| | | | | C400 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C401 | 87-012-286-080 | | CAP, U 0.01-25 |
| | | | | C402 | 87-012-286-080 | | CAP, U 0.01-25 |
| | | | | C403 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C404 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C405 | 87-010-661-080 | | C-CAP,E 10-16 |
| | | | | C406 | 87-010-779-080 | | C-CAP,E 100-6.3 |
| | | | | C407 | 87-012-197-080 | | C-CAP,U 150P-50 CH |
| | | | | C408 | 87-012-197-080 | | C-CAP,U 150P-50 CH |
| | | | | C411 | 87-012-271-080 | | CAP, U 560P-50 |
| | | | | C412 | 87-012-271-080 | | CAP, U 560P-50 |
| | | | | C413 | 87-012-197-080 | | C-CAP,U 150P-50 CH |
| | | | | C414 | 87-012-197-080 | | C-CAP,U 150P-50 CH |
| | | | | C417 | 87-012-268-080 | | C-CAP,U 330P-50 B |
| | | | | C418 | 87-012-268-080 | | C-CAP,U 330P-50 B |
| | | | | C423 | 87-012-286-080 | | CAP, U 0.01-25 |
| | | | | C424 | 87-012-286-080 | | CAP, U 0.01-25 |
| | | | | C429 | 87-012-286-080 | | CAP, U 0.01-25 |
| | | | | C430 | 87-012-286-080 | | CAP, U 0.01-25 |
| | | | | C431 | 87-010-779-080 | | C-CAP,E 100-6.3 |
| | | | | C434 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C500 | 87-010-661-080 | | C-CAP,E 10-16 |
| | | | | C501 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C502 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C503 | 87-010-846-080 | | C-CAP,E 4.7-35V |
| | | | | C504 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C505 | 87-010-846-080 | | C-CAP,E 4.7-35V |
| | | | | C506 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C507 | 87-010-661-080 | | C-CAP,E 10-16 |
| | | | | C508 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C509 | 87-010-846-080 | | C-CAP,E 4.7-35V |
| | | | | C510 | 87-010-831-080 | | C-CAP,U,0.1-16F |
| | | | | C511 | 87-010-661-080 | | C-CAP,E 10-16 |
| | | | | C513 | 87-010-661-080 | | C-CAP,E 10-16 |
| | | | | C514 | 87-010-661-080 | | C-CAP,E 10-16 |
| | | | | C515 | 87-012-337-080 | | C-CAP,U 56P-50 CH |
| | | | | C516 | 87-012-337-080 | | C-CAP,U 56P-50 CH |
| | | | | C517 | 87-012-278-080 | | C-CAP,U 2200P-50 B |
| | | | | C518 | 87-012-278-080 | | C-CAP,U 2200P-50 B |
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| REF. NO | PART NO. | KANRI NO. | DESCRIPTION | REF. NO | PART NO. | KANRI NO. | DESCRIPTION |
|---------|----------------|--------------------------|-------------|-------------|----------------|------------------------------|-------------|
| C519 | 87-010-831-080 | C-CAP,U,0.1-16F | | L504 | 87-005-774-080 | C-COIL,4BLH | |
| C520 | 87-010-661-080 | C-CAP,E 10-16 | | L505 | 87-005-774-080 | C-COIL,4BLH | |
| C521 | 87-010-831-080 | C-CAP,U,0.1-16F | | L611 | 87-A50-163-080 | C-COIL,ZBFS5101-PT | |
| C522 | 87-010-661-080 | C-CAP,E 10-16 | | L612 | 87-005-512-080 | C-COIL,BLM21A05 | |
| C523 | 87-010-662-080 | C-CAP,E 22-6.3 | | L614 | 87-A50-163-080 | C-COIL,ZBFS5101-PT | |
| C524 | 87-010-662-080 | C-CAP,E 22-6.3 | | L615 | 87-A90-034-080 | C-FLTR,EMI BLM41P750 | |
| C525 | 87-012-274-080 | CHIP CAP,U 1000P-50B | | L616 | 87-A50-163-080 | C-COIL,ZBFS5101-PT | |
| C526 | 87-012-274-080 | CHIP CAP,U 1000P-50B | | R315 | 87-022-239-080 | C-RES U 10K-1/16WF | |
| C527 | 87-010-661-080 | C-CAP,E 10-16 | | R423 | 87-025-564-080 | C-RES,U M/F 47K D | |
| C528 | 87-010-661-080 | C-CAP,E 10-16 | | R424 | 87-025-564-080 | C-RES,U M/F 47K D | |
| C530 | 87-010-831-080 | C-CAP,U,0.1-16F | | R425 | 87-022-583-080 | C-RES,U M/F 12K D | |
| C531 | 87-010-831-080 | C-CAP,U,0.1-16F | | R426 | 87-022-583-080 | C-RES,U M/F 12K D | |
| C532 | 87-010-831-080 | C-CAP,U,0.1-16F | | S701 | 87-A90-947-080 | C-SW,MICRO SPPB63 | |
| C600 | 87-010-662-080 | C-CAP,E 22-6.3 | | S702 | 87-A90-947-080 | C-SW,MICRO SPPB63 | |
| C601 | 87-010-779-080 | C-CAP,E 100-6.3 | | X200 | 87-A70-270-080 | C-VIB,XTAL 45.1584MHZ SMD-49 | |
| C602 | 87-010-779-080 | C-CAP,E 100-6.3 | | X301 | 87-A70-100-080 | C-VIB,CER 12.0MHZ PBRC-BR-A | |
| C603 | 87-010-662-080 | C-CAP,E 22-6.3 | | | | | |
| C604 | 87-010-779-080 | C-CAP,E 100-6.3 | | | | | |
| C605 | 87-012-286-080 | CAP, U 0.01-25 | | DISC SW C.B | | | |
| C607 | 87-A10-711-080 | C-CAP,E 100-6.3 M MF | | | | | |
| C701 | 87-010-779-080 | C-CAP,E 100-6.3 | | CNA901 | 8Z-ZG2-614-010 | CONN ASSY,2P V ZZG-2 | |
| C702 | 87-012-286-080 | CAP, U 0.01-25 | | R900 | 87-022-361-080 | C-RES,S 47K-1/10W F | |
| C703 | 87-012-286-080 | CAP, U 0.01-25 | | R901 | 87-022-359-080 | C-RES,S22K-1/10WF | |
| C706 | 87-010-831-080 | C-CAP,U,0.1-16F | | R902 | 87-022-355-080 | C-RES,S10K-1/10W F | |
| CN100 | 87-A61-347-080 | C-CONN,21P H XF2H-2115-1 | | S900 | 87-A90-948-010 | SW,LVR 2-1-2 MPU11263MLB0 | |
| CN200 | 87-A60-816-080 | C-CONN,9P V 6232 | | S901 | 87-A90-948-010 | SW,LVR 2-1-2 MPU11263MLB0 | |
| CN300 | 87-A60-518-080 | C-CONN,8P H 6232 | | S902 | 87-A90-948-010 | SW,LVR 2-1-2 MPU11263MLB0 | |
| CN400 | 87-A60-714-080 | C-CONN,8P V FMN-BMTR | | | | | |
| CN600 | 87-A60-519-080 | C-CONN,14P H 6232 | | MOTOR C.B | | | |
| CN700 | 87-A60-814-080 | C-CONN,4P H 6232 | | | | | |
| FB204 | 83-XM1-617-080 | C-COIL,BK2125HM601 | | CN900 | 87-A60-817-010 | CONN,4P V 52806-0410 | |
| FB205 | 83-XM1-617-080 | C-COIL,BK2125HM601 | | M900 | 87-A91-054-010 | MOT,FF-050SK | |
| FB501 | 87-A90-828-080 | C-F-BEAD, BK1608LM182 | | | | | |
| L100 | 87-A50-117-080 | C-COIL,10UHLQH3C | | LOAD C.B | | | |
| L101 | 87-A50-012-080 | C-COIL,100UH LQH3C | | | | | |
| L102 | 87-A50-117-080 | C-COIL,10UHLQH3C | | CN100 | 87-A60-818-010 | CONN,9P H 52807-0910 | |
| L103 | 87-A50-117-080 | C-COIL,10UHLQH3C | | CN101 | 87-099-047-010 | CONN,04FM-1.0 ST | |
| L201 | 87-A50-117-080 | C-COIL,10UHLQH3C | | M100 | 87-A90-672-010 | MOT,M25E-4 | |
| L202 | 87-A50-117-080 | C-COIL,10UHLQH3C | | S100 | 87-036-109-010 | PUSH SWITCH | |
| L203 | 87-A50-116-080 | C-COIL,4.7UHLQH3C | | S101 | 87-A90-117-010 | SW,PUSH 1-1-1 MPU103 | |
| L204 | 87-003-367-080 | C-COIL,U 2.2UHK | | MECHA C.B | | | |
| L301 | 87-A50-117-080 | C-COIL,10UHLQH3C | | | | | |
| L501 | 87-A50-116-080 | C-COIL,4.7UHLQH3C | | CON400 | 87-A60-714-080 | C-CONN,8P V FMN-BMTR | |
| L502 | 87-A50-116-080 | C-COIL,4.7UHLQH3C | | SW400 | 87-A90-611-010 | SW,PUSH 3-2-2 MPU20300MLB0 | |
| L503 | 87-A50-116-080 | C-COIL,4.7UHLQH3C | | SW401 | 87-A90-612-010 | SW,PUSH 2-1-1 MPU10371MLB1 | |

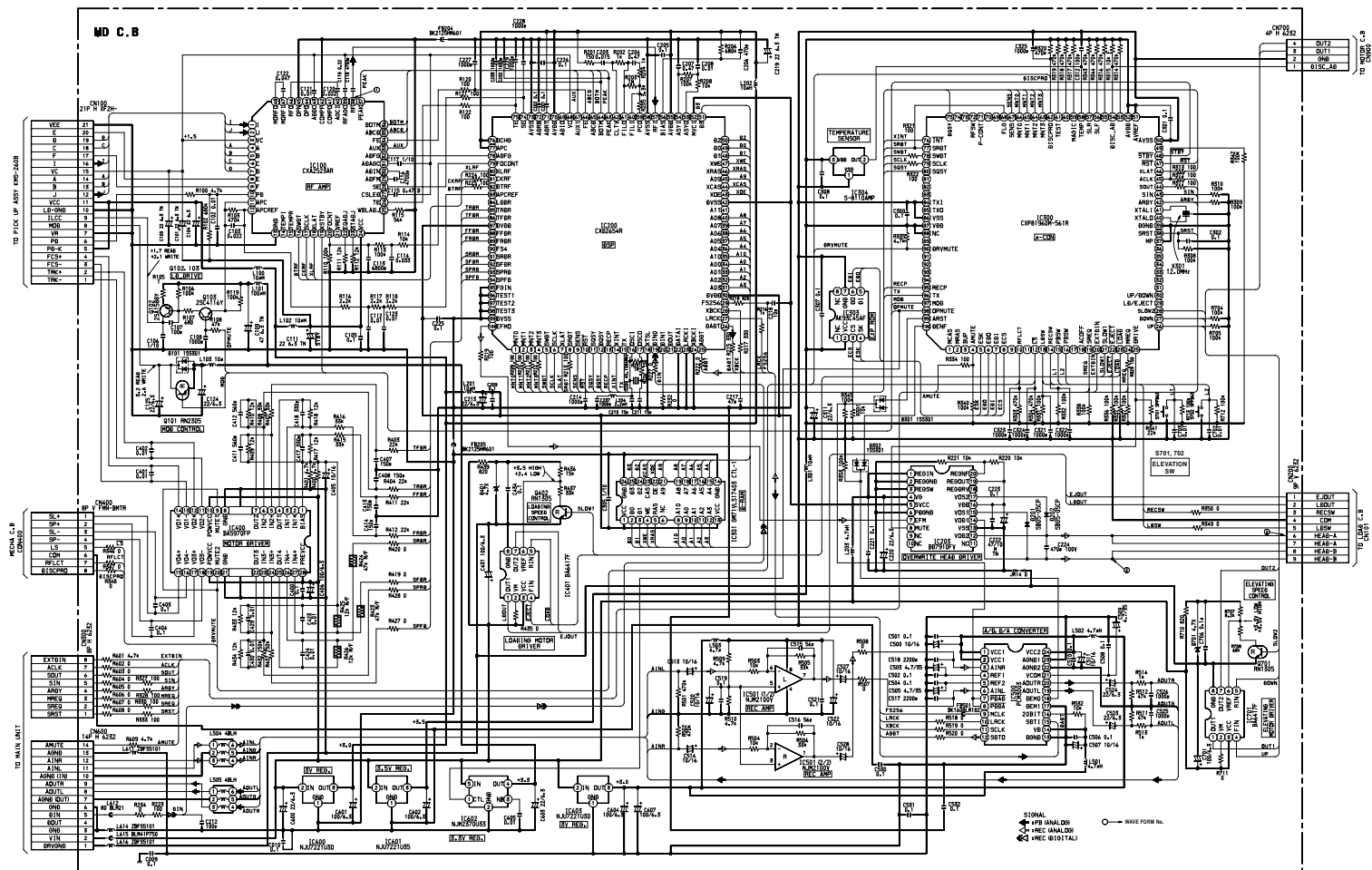
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WIRING-1 (MD)

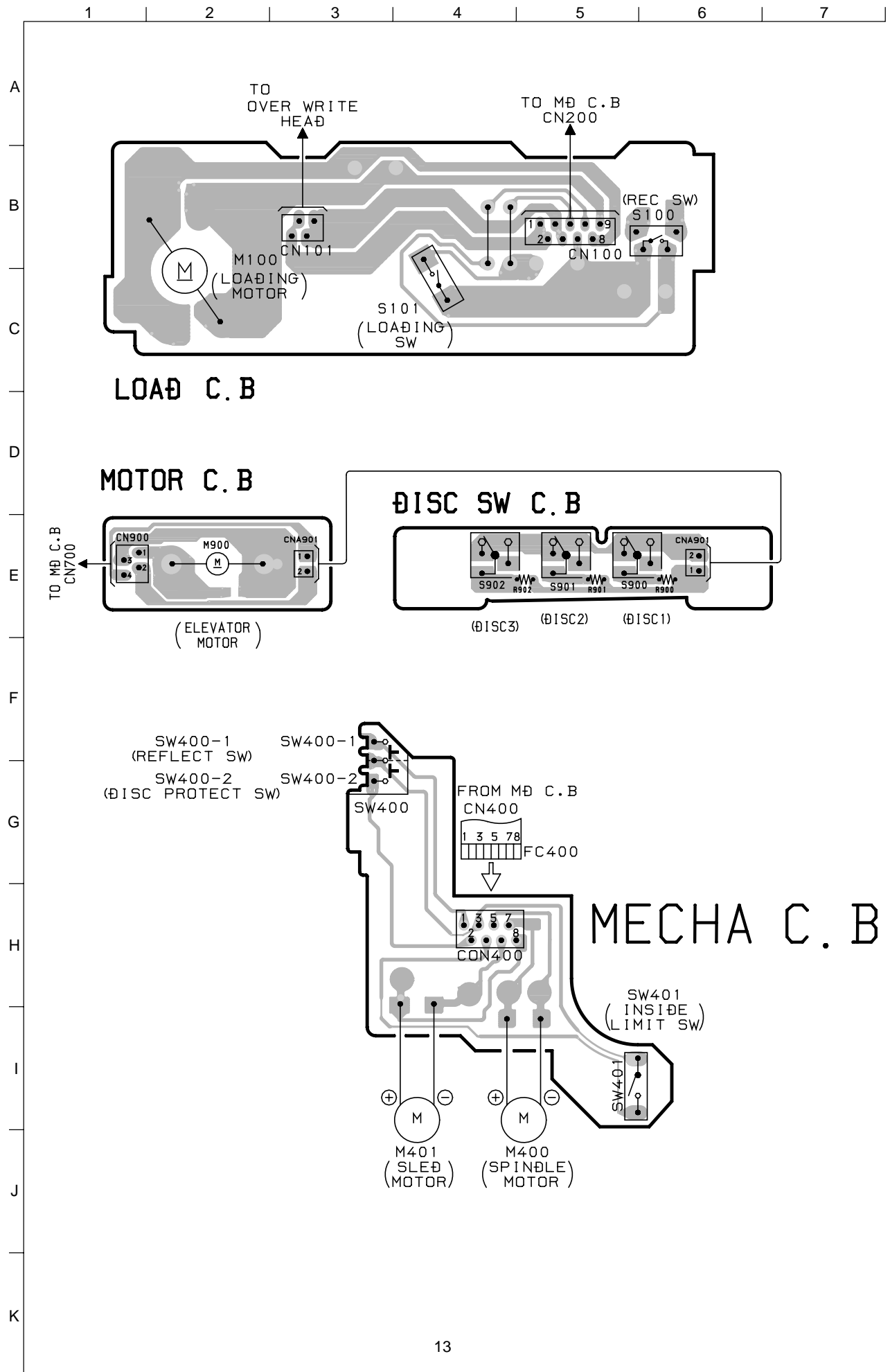


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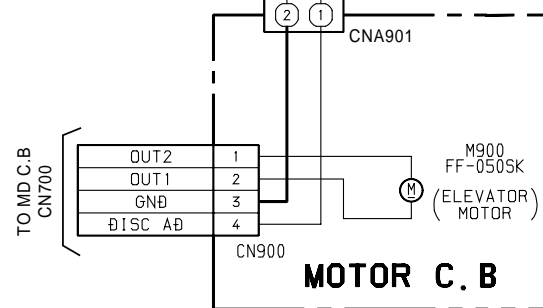
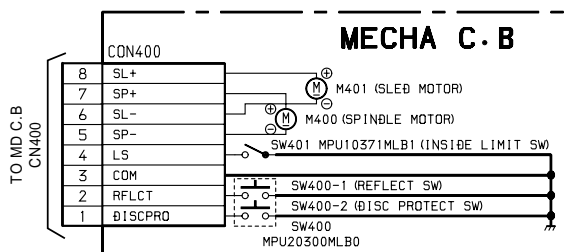
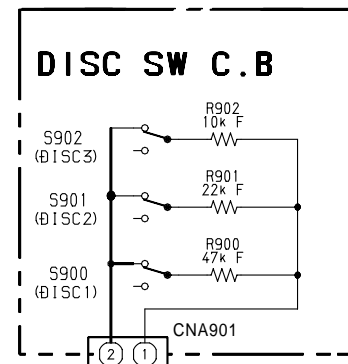
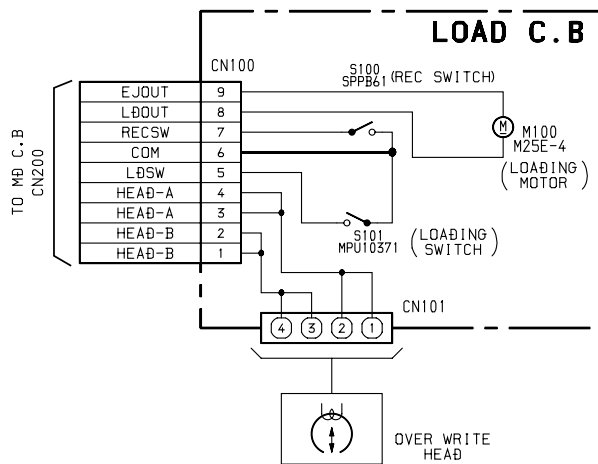
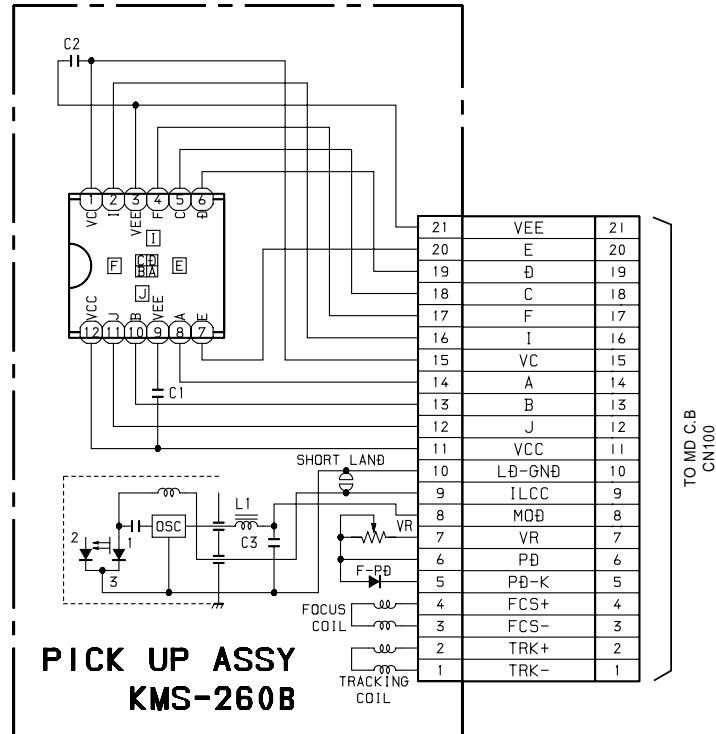
SCHEMATIC DIAGRAM-1 (MD)



WIRING-2 (LOAD/MOTOR/DISC SW/MECHA)



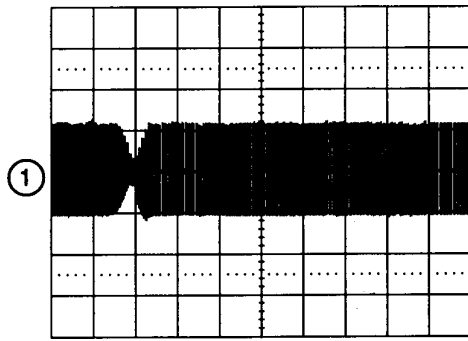
SCHEMATIC DIAGRAM-2 (PICK UP/LOAD/DISC SW/MOTOR/MECHA)



WAVE FORM

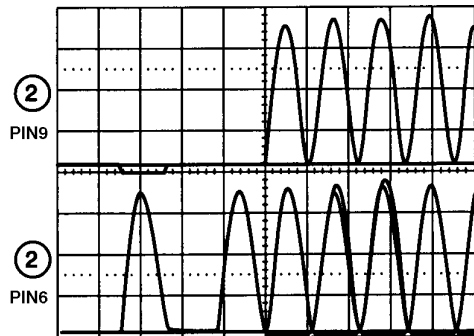
① IC100 Pin ③⑧ (RF)

VOLT/DIV: 0.5V
TIME/DIV: 1mS

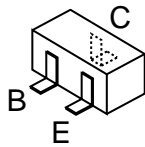


② CN200 Pin ⑨ (HEAD-B)
CN200 Pin ⑥ (HEAD-A)

VOLT/DIV: 10V
TIME/DIV: 0.2μS



TRANSISTOR ILLUSTRATION



2SA1588
2SC4116
RN1305
RN2305

IC DESCRIPTION

IC, CXA2523AR

| Pin No. | Pin Name | I/O | Description |
|---------|----------|-----|---|
| 1 | I | I | Input “I” RF signal converted to I-V. |
| 2 | J | I | Input “J” RF signal converted to I-V. |
| 3 | VC | O | Output voltage for VCC/2. |
| 4 | A | I | Input current for main beam servo signal A. |
| 5 | B | I | Input current for main beam servo signal B. |
| 6 | C | I | Input current for main beam servo signal C. |
| 7 | D | I | Input current for main beam servo signal D. |
| 8 | E | I | Input current for side beam servo signal E. |
| 9 | F | I | Input current for side beam servo signal F. |
| 10 | PD | I | Input beam spectrum monitor signal. |
| 11 | APC | O | Output laser APC. |
| 12 | APCREF | I | Input reference voltage for laser power setting. |
| 13 | GND | — | GND. |
| 14 | TEMPI | I | Not used. |
| 15 | TEMPR | I | |
| 16 | SWDT | I | Input micro-processor serial interface data. |
| 17 | SCLK | I | Input micro-processor serial interface shift clock. |
| 18 | XLAT | I | Input micro-processor serial interface latch. “L”: Latch. |
| 19 | XSTBY | I | Standby setting pin. “H”: Normal mode, “L”: Standby. |
| 20 | FOCNT | I | Internal current setting pin. |
| 21 | VREF | O | Not used. |
| 22 | EQADJ | I/O | EQ central frequency setting pin. |
| 23 | 3TADJ | I/O | BPF3T central frequency setting pin. |
| 24 | VCC | — | Power supply pin. |
| 25 | WBLADJ | I/O | BPF22 central frequency setting pin. |
| 26 | TE | O | Output tracking error signal. |
| 27 | CSLED | — | LPF capacitor connection pin for SLED error signal. |
| 28 | SE | O | Output SLED error signal. |
| 29 | ADFM | O | Output ADIP FM signal. |
| 30 | ADIN | I | Input ADIP signal comparator. |
| 31 | ADAGC | — | ADIPAGC capacitor connection pin. |
| 32 | ADFG | O | Output ADIP2 binary data signal. |
| 33 | AUX | O | I3 output temperature signal. Switched by serial command. |
| 34 | FE | O | Output focus error signal. |
| 35 | ABCD | O | Output beam spectrum signal for main beam servo detector. |
| 36 | BOTM | O | Output bottom hold signal for RF/ABCD. |
| 37 | PEAK | O | Output peak hold signal for RF/ABCD. |
| 38 | RF | O | RF equalizer output pin. |
| 39 | RFAGC | — | RFAGC capacitor connection pin. |
| 40 | AGCI | I | RFAGC input pin. |
| 41 | COMPO | O | Not used. |

| Pin No. | Pin Name | I/O | Description |
|---------|----------|-----|--|
| 42 | COMPP | I | User comparator non-inverted input pin. |
| 43 | ADDC | I/O | Capacitor connection pin for ADIP amplifier on return circuit. |
| 44 | OPO | O | Not used. |
| 45 | OPN | I | Non-inverted input pin for user operational amplifier. |
| 46 | RFO | O | RF amplifier output pin. Check point for eye pattern. |
| 47 | MORFI | I | Input pin where Groove RF signal is AC coupled. |
| 48 | MORFO | O | Output pin for Groove RF signal. |

IC, CXD2654R

| Pin No. | Pin Name | I/O | Description |
|---------|-------------------------|-----|---|
| 1 | MNT0 | O | Monitor output terminal. |
| 2 | MNT1 | O | |
| 3 | MNT2 | O | |
| 4 | MNT3 | O | |
| 5 | SWDT | I | Microprocessor serial interface data input. |
| 6 | SCLK | I | Microprocessor serial interface shift clock input. |
| 7 | XLAT | I | Microprocessor serial interface latch input. Latched at falling down edge. |
| 8 | SRDT | O | Microprocessor serial interface data output. |
| 9 | SENS | O | The terminal which outputs internal status in accordance with the address of the microprocessor serial interface. |
| 10 | $\overline{\text{RST}}$ | I | Reset input. L: reset. |
| 11 | SQSY | O | Disc sub code Q sync/ADIP sync output. |
| 12 | DQSY | O | Subcode Q sync output of U-bit CD or MD format when the DIGITAL IN source is CD or MD. |
| 13 | RECP | I | Laser power selection input. H: Recording power, L: Playback power. |
| 14 | XINT | O | Interrupt request output terminal. L is output when interrupt status is generated. |
| 15 | TX | I | Record data output enable signal input terminal. H: enable. |
| 16 | OSCI | I | Crystal oscillator circuit input terminal. |
| 17 | OSCO | O | Crystal oscillator circuit output terminal. (Inverted output of OSCI). |
| 18 | XTSL | I | OSCI terminal input frequency selection. H: 512 Fs (22.5792 MHz), L: 1024 Fs (45.1584 MHz). |
| 19 | DIN0 | I | Digital audio interface signal input 1. |
| 20 | DIN1 | I | Digital audio interface signal input 2. |
| 21 | DOUT | O | Digital audio interface signal output. |
| 22 | DATAI | I | Test pin. Connect to GND. |
| 23 | LRCKI | I | Test pin. Connect to GND. |
| 24 | XBCKI | I | Test pin. Connect to GND. |
| 25 | ADDI | I | Data input from A/D converter. |
| 26 | DADI | O | REC monitor output/decoded audio data output. |
| 27 | LRCK | O | LR clock (44.1kHz) output to the external audio block. |
| 28 | XBCK | O | Bit clock (2.8224MHz) output to the external audio block. |
| 29 | FS256 | O | 256Fs output. |
| 30 | DVDD | — | Digital power supply. |
| 31 | A03 | O | Eternal DRAM address output. |
| 32 | A02 | O | |
| 33 | A01 | O | |
| 34 | A00 | O | |
| 35 | A10 | O | |
| 36 | A04 | O | |
| 37 | A05 | O | |
| 38 | A06 | O | |

| Pin No. | Pin Name | I/O | Description |
|---------|----------|-----|--|
| 39 | A07 | O | External DRAM address output. |
| 40 | A08 | O | |
| 41 | A11 | O | External DRAM address output. (Not connected) |
| 42 | DVSS | — | Digital ground. |
| 43 | XOE | O | External DRAM output enable. |
| 44 | XCAS | O | External DRAM CAS output. |
| 45 | A09 | O | External DRAM address output. |
| 46 | XRAS | O | External DRAM RAS output. |
| 47 | XWE | O | External DRAM write enable. |
| 48 | D1 | I/O | External DRAM data bus. |
| 49 | D0 | I/O | |
| 50 | D2 | I/O | |
| 51 | D3 | I/O | |
| 52 | MVCI | I | External VCO (784Fs) clock input. |
| 53 | ASYO | O | Playback EFM full- swing output. (Low: VSS; high: VDD) |
| 54 | ASYI | I | Playback EFM comparator slice voltage input. |
| 55 | AVDD | — | Analog power supply. |
| 56 | BIAS | I | Playback EFM comparator bias current input. |
| 57 | RFI | I | Playback EFM RF signal input. |
| 58 | AVSS | — | Analog ground. |
| 59 | PCO | O | Phase comparison output for master PLL of playback digital PLL and recording EFM PLL. |
| 60 | FILI | I | Filter input for master PLL of playback digital PLL and recording EFM PLL. |
| 61 | FILO | O | Filter output for master PLL of playback digital PLL and recording EFM PLL. |
| 62 | CLTV | I | Internal VCO control voltage input for master PLL of playback digital PLL and recording EFM PLL. |
| 63 | PEAK | I | Peak hold signal input for quantity of light. |
| 64 | BOTM | I | Bottom hold signal input for quantity of light. |
| 65 | ABCD | I | Signal input for quantity of light. |
| 66 | FE | I | Focus error signal input. |
| 67 | AUX1 | I | Auxiliary input 1. |
| 68 | VC | I | Center voltage input. |
| 69 | ADIO | O | Monitor output for A/D converter input signal. (Not connected) |
| 70 | AVDD | — | Analog power supply. |
| 71 | ADRT | I | Voltage input for the upper limit of the A/D converter operating range. |
| 72 | ADRB | I | Voltage input for the lower limit of the A/D converter operating range. |
| 73 | AVSS | — | Analog ground. |
| 74 | SE | I | Sled error signal input. |
| 75 | TE | I | Tracking error signal input. |
| 76 | DCHG | I | Connected to the low impedance power supply. |
| 77 | APC | I | Error signal input to the laser digital APC. |

| Pin No. | Pin Name | I/O | Description |
|---------|----------|-----|---|
| 78 | ADFG | I | ADIP2 binary-converted FM signal (22.05±1 kHz) input. |
| 79 | F0CNT | O | Current source setting output terminal to CXA2523. |
| 80 | XLRF | O | Latch output for CXA2523 control. Latched at rise-up. |
| 81 | CKRF | O | Shift clock output for CXA2523 control. |
| 82 | DTRF | O | Data output for CXA2523 control. |
| 83 | APCREF | O | Reference PWM output to laser APC. |
| 84 | LDDR | O | Not used. |
| 85 | TRDR | O | Tracking servo drive PWM output. (-). |
| 86 | TFDR | O | Tracking servo drive PWM output. (+). |
| 87 | DVDD | — | Digital power supply. |
| 88 | FFDR | O | Focus servo drive PWM output. (+). |
| 89 | FRDR | O | Focus servo drive PWM output. (-). |
| 90 | FS4 | O | Not used. |
| 91 | SRDR | O | Sled servo drive PWM output. (-). |
| 92 | SFDR | O | Sled servo drive PWM output. (+). |
| 93 | SPRD | O | Spindle servo drive PWM output. (PWM (-) or negative polarity). |
| 94 | SPFD | O | Spindle servo drive PWM output. (PWM (+) or PWM absolute value). |
| 95 | FGIN | I | FG input to spindle CAV servo. |
| 96 | TEST1 | I | Test pin. Connected to GND. |
| 97 | TEST2 | I | |
| 98 | TEST3 | I | |
| 99 | DVSS | — | Digital GND. |
| 100 | EFMO | O | Low signal during playback. EFM (encode data) output: during recording. |

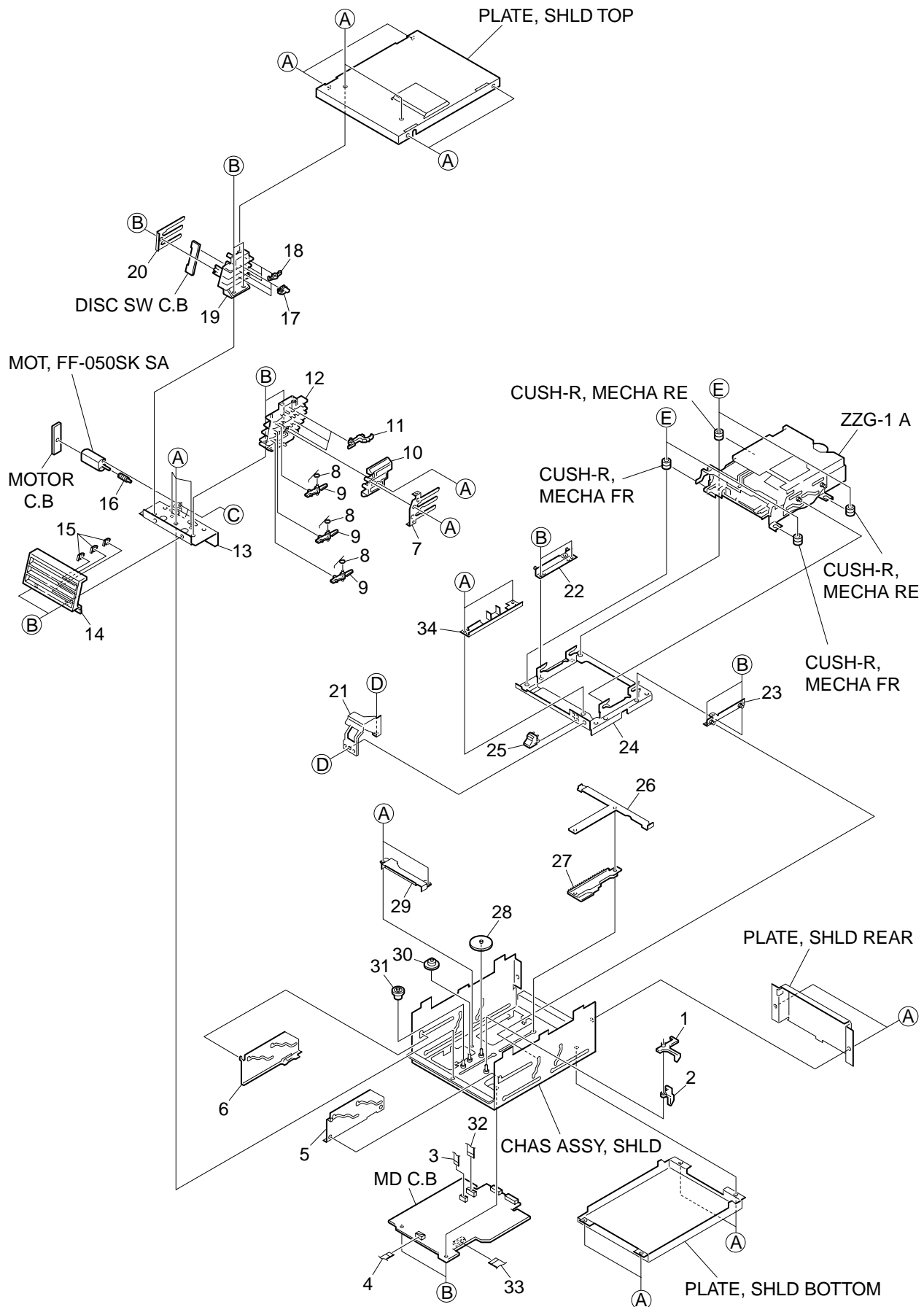
IC, CXP81960M-561R

| Pin No. | Pin Name | I/O | Description |
|---------|----------|-----|--|
| 1 | MCAS | — | Not used. |
| 2 | MRAS | — | |
| 3 | BUP | — | |
| 4 | AMUTE | O | Audio mute signal output. |
| 5 | ESK | O | Serial clock output for EEPROM interface. |
| 6 | EDO | O | Serial data output for EEPROM interface. |
| 7 | EDI | I | Serial data input for EEPROM interface. |
| 8 | ECS | O | EEPROM chip select signal output. |
| 9 | NC | — | Not used. |
| 10 | RFLCT | I | Input from disc reflectance detection switch. |
| 11 | NC | — | Not used. |
| 12 | LS | I | Input signal from pickup inner circumference detect switch. |
| 13 | LDSW | I | Input signal from loading mechanism EJECT position detect switch. |
| 14 | RECSW | I | Input signal from loading mechanism REC position detect switch. |
| 15 | PBSW | I | Elevator's mechanical position detection switch input. |
| 16 | PBSW | I | |
| 17 | NC | — | Not used. |
| 18 | ACOFF | — | |
| 19 | SREQ | I | System control send request input signal for system control interface. |
| 20 | EXTDIN | O | External DIGITAL-IN permission output signal. |
| 21 | SLOW1 | O | Speed control signal output to loading mechanism. |
| 22 | EJECT | O | Movement direction control signal output-1 to loading mechanism. |
| 23 | LOAD | O | Movement direction control signal output-2 to loading mechanism. |
| 24 | MREQ | O | MD controller send request output signal for system control interface. |
| 25 | DRIVE | O | EFM driver ON/OFF output signal. |
| 26 | UP | O | Operation direction control signal output 1 from the elevator mechanism. |
| 27 | DOWN | O | Operation direction control signal output 2 from the elevator mechanism. |
| 28 | SLOW2 | O | Speed control signal output of the elevator mechanism. |
| 29 | LE/EJECT | — | Not used. |
| 30 | UP/DOWN | — | |
| 31 | NC | — | |
| 32 | NC | — | |
| 33 | NC | — | |
| 34 | NC | — | |
| 35 | NC | — | |
| 36 | NC | — | |
| 37 | MP | — | Connected to VSS. |
| 38 | SRST | I | MD controller reset signal input. |
| 39 | DGND | — | Connected to VSS. |
| 40 | XTALO | O | External crystal connection terminal-1 for system clock oscillation. |
| 41 | XTALI | I | External crystal connection terminal-2 for system clock oscillation. |

| Pin No. | Pin Name | I/O | Description |
|---------|--------------------------|-----|---|
| 42 | ARDY | I | READY input signal for system control interface. |
| 43 | SIN | I | Serial data input for system control interface. |
| 44 | SOUT | O | Serial data output for system control interface. |
| 45 | ACLK | O | Serial clock output for system control interface. |
| 46 | XLAT | O | Latch signal output for CXD2654 interface. |
| 47 | $\overline{\text{RST}}$ | O | CXD2654 reset signal output. |
| 48 | $\overline{\text{STBY}}$ | O | CXA2523 standby signal output. |
| 49 | NC | O | Not used. |
| 50 | AVSS | — | Connected to VSS. |
| 51 | AVREF | I | Connected to VDD. |
| 52 | AVDD | I | |
| 53 | NC | I | Not used. |
| 54 | DISC_AD | I | Selection disc detection. |
| 55 | NC | I | Not used. |
| 56 | SLF | I | |
| 57 | SLR | I | |
| 58 | TEMP | I | Temperature sensor A/D input. |
| 59 | MAGIC | I | Not used. |
| 60 | NC | I | |
| 61 | TEST | I | |
| 62 | DISCPRO | I | Disc write protection switch input. |
| 63 | MNT3 | I | CXD2654 monitor signal input-1. |
| 64 | MNT2 | I | CXD2654 monitor signal input-2. |
| 65 | MNT1 | I | CXD2654 monitor signal input-3. |
| 66 | MNT0 | I | CXD2654 monitor signal input-4. |
| 67 | SENS | I | CXD2654 SENS signal input. |
| 68 | FLG | O | Monitoring signal of flag contained in SRDT of CXD2652 interface. |
| 69 | NC | O | Not used. |
| 70 | NC | O | |
| 71 | P-CONT | O | |
| 72 | RFSW | O | |
| 73 | NC | O | |
| 74 | NC | O | |
| 75 | DQSY | I | DIGITAL-IN SUB-Q sync input. |
| 76 | $\overline{\text{INT}}$ | I | CXD2654 status sync input. |
| 77 | SRDT | I | Serial data input for CXD2654 interface. |
| 78 | SWDT | O | Serial data output for CXD2654 interface. |
| 79 | SCLK | O | Serial clock output for CXD2654 interface. |
| 80 | SQSY | I | SUB-Q, ADIP sync input. |
| 81 | NC | — | Not used. |
| 82 | NC | — | |

| Pin No. | Pin Name | I/O | Description |
|---------|----------|-----|--|
| 83 | NC | — | Not used. |
| 84 | TXI | I | Connected to VSS. |
| 85 | TXO | O | Open. |
| 86 | VSS | — | Connected to VSS. |
| 87 | VDD | — | Connected to VDD. |
| 88 | NC | — | |
| 89 | NC | — | Not used. |
| 90 | DRVMUTE | O | BA5970FP mute signal output. |
| 91 | NC | — | Not used. |
| 92 | NC | — | |
| 93 | NC | — | |
| 94 | NC | — | |
| 95 | RECP | O | Laser power select signal output. |
| 96 | TX | O | Record data output enable signal output. |
| 97 | MOD | O | High frequency superimpose circuit ON/OFF signal output. |
| 98 | OPMUTE | O | Laser mute signal output. |
| 99 | ARST | O | PCM3003 reset signal output. |
| 100 | DENF | O | De-emphasis ON/OFF signal output. |

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL PARTS LIST 1/1

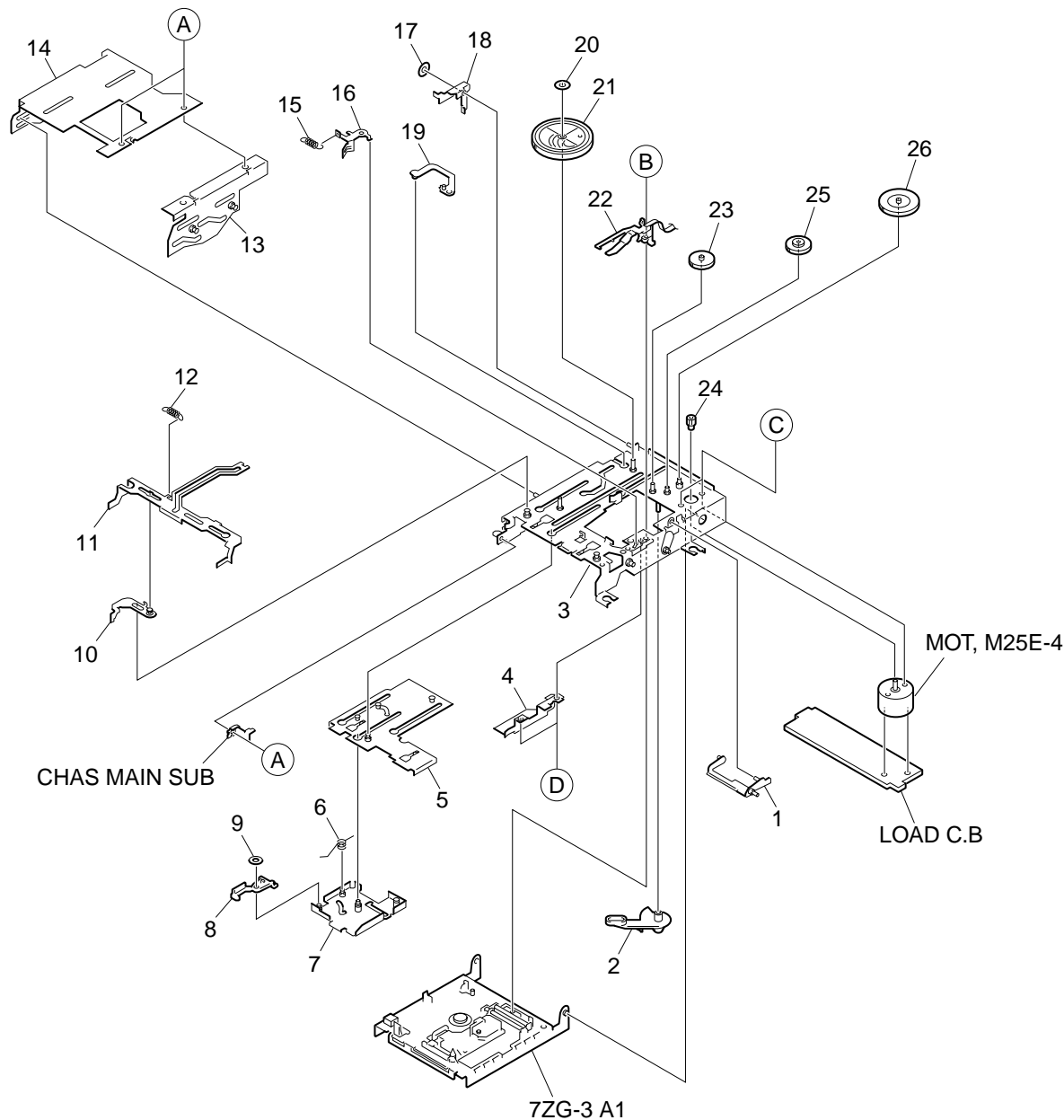
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO | PART NO. | KANRI NO. | DESCRIPTION | REF. NO | PART NO. | KANRI NO. | DESCRIPTION |
|---------|----------------|-----------|------------------------|---------|----------------|-----------|-------------------------|
| 1 | 8Z-ZG2-220-010 | | LEVER,SW RACK A | 21 | 8Z-ZG2-238-010 | | HLDR,MECHA STOP |
| 2 | 8Z-ZG2-221-010 | | LEVER,SW RACK B | 22 | 8Z-ZG2-241-010 | | HLDR,ASSY M SUB L |
| 3 | 8Z-ZG1-606-010 | | FF-CABLE, 8P 1.0 115MM | 23 | 8Z-ZG2-243-010 | | HLDR,ASSY M SUB R |
| 4 | 8Z-ZG2-613-010 | | FF-CABLE, 4P 1.0 70MM | 24 | 8Z-ZG2-235-010 | | HLDR,MECHA |
| 5 | 8Z-ZG2-213-010 | | SLIDER ASSY,CAM R | 25 | 8Z-ZG2-239-010 | | STOPPER,HLDR M |
| 6 | 8Z-ZG2-210-010 | | SLIDER ASSY,CAM L | 26 | 8Z-ZG2-207-010 | | JOINT ASSY,SLIDER |
| 7 | 8Z-ZG2-233-010 | | SPR-P,STOPPER R | 27 | 8Z-ZG2-219-010 | | GEAR,RACK JT |
| 8 | 8Z-ZG2-245-010 | | SPR-T,LVR PUSH | 28 | 8Z-ZG2-218-010 | | GEAR,JT B |
| 9 | 8Z-ZG2-230-010 | | LEVER,PUSH R | 29 | 8Z-ZG2-244-010 | | PLATE,PROTECTOR |
| 10 | 8Z-ZG2-231-010 | | HLDR,LEVER R | 30 | 8Z-ZG2-217-010 | | GEAR,JT A |
| 11 | 8Z-ZG2-229-010 | | LEVER,STOPPER R | 31 | 8Z-ZG2-216-010 | | WORM-WHL,JT |
| 12 | 8Z-ZG2-225-010 | | MAGAZINE,R | 32 | 8Z-ZG2-612-010 | | FF-CABLE, 9P 1.0 90MM |
| 13 | 8Z-ZG2-223-010 | | HLDR,MAGAZINE | 33 | 8Z-ZG1-605-010 | | FF-CABLE, 21P 0.5 100MM |
| 14 | 8Z-ZG2-001-010 | | MAGAZINE,F | 34 | 8Z-ZG2-248-010 | | PLATE,PROTECT PIC |
| 15 | 8Z-ZG2-247-010 | | PLATE,MAGAZINE F | A | 87-067-684-010 | | BVT2+2.6-6 W/O SLOT |
| 16 | 8Z-ZG2-215-010 | | GEAR,WORM JT | B | 87-743-073-410 | | UT2+2.6-6 |
| 17 | 8Z-ZG2-227-010 | | STOPPER,L | C | 87-262-545-310 | | V+2-2.5 |
| 18 | 8Z-ZG2-228-010 | | LEVER,STOPPER L | D | 87-067-421-010 | | VTT+2-4 |
| 19 | 8Z-ZG2-224-010 | | MAGAZINE,L | E | 87-ZG9-208-010 | | S-SCREW,MD T |
| 20 | 8Z-ZG2-232-010 | | SPR-P,STOPPER L | | | | |

COLOR NAME TABLE

| Basic color symbol | Color | Basic color symbol | Color | Basic color symbol | Color |
|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| B | Black | C | Cream | D | Orange |
| G | Green | H | Gray | L | Blue |
| LT | Transparent Blue | N | Gold | P | Pink |
| R | Red | S | Silver | ST | Titan Silver |
| T | Brown | V | Violet | W | White |
| WT | Transparent White | Y | Yellow | YT | Transparent Yellow |
| LM | Metallic Blue | LL | Light Blue | GT | Transparent Green |
| LD | Dark Blue | DT | Transparent Orange | GM | Metallic Green |
| YM | Metallic Yellow | DM | Metallic Orange | PT | Transparent Pink |

MECHANISM EXPLODED VIEW 1/1 (ZZG-1 A)

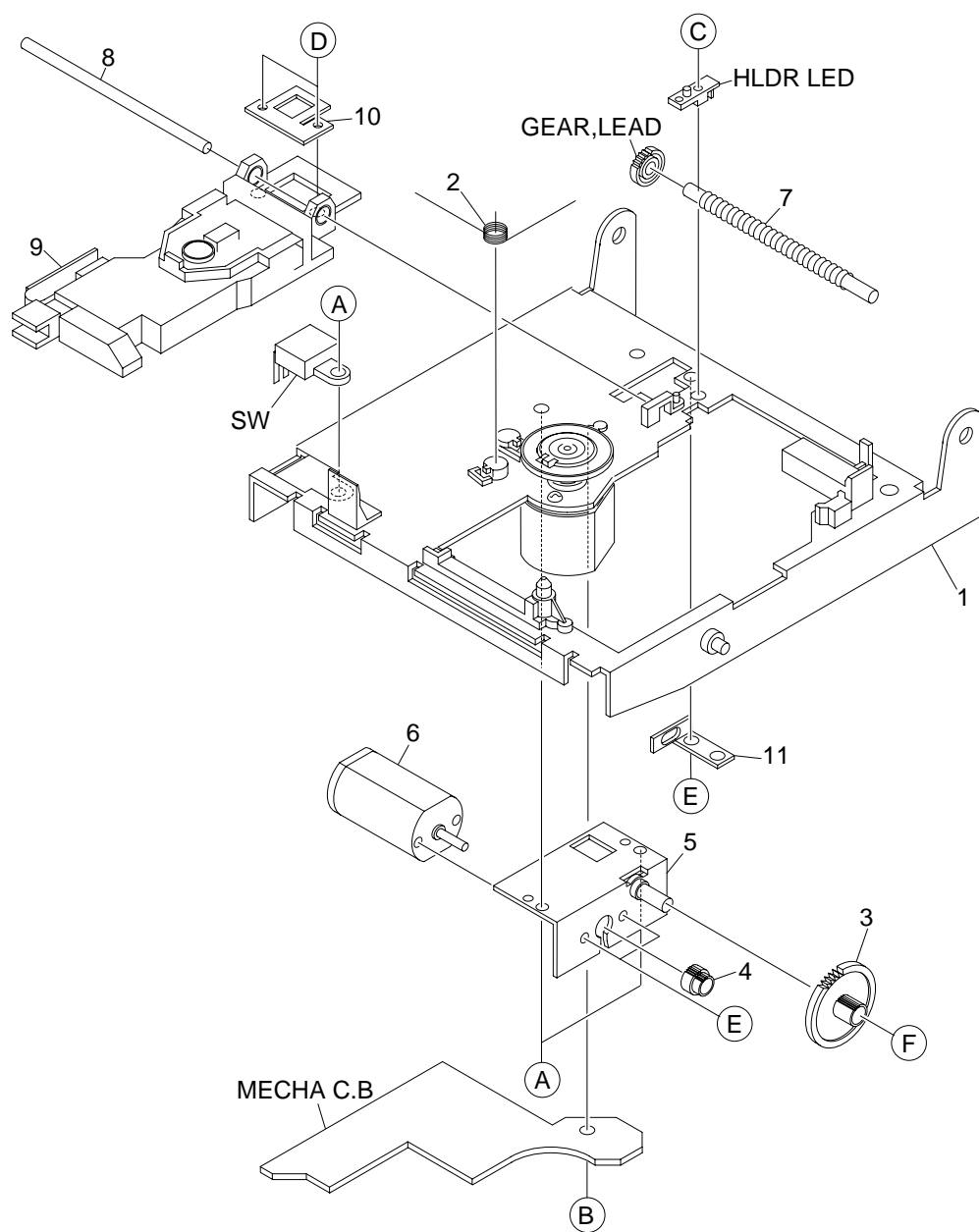


MD MECHANISM PARTS LIST 1/1 (ZZG-1 A)

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If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO | PART NO. | KANRI NO. | DESCRIPTION | REF. NO | PART NO. | KANRI NO. | DESCRIPTION |
|---------|----------------|-----------|-------------------------------|---------|----------------|-----------|----------------------------|
| 1 | 87-ZG8-257-210 | | LEVER ASSY,REC | 16 | 87-ZG8-231-010 | | LEVER,SHUTTER |
| 2 | 8Z-ZG1-220-010 | | LEVER,SW EJECT | 17 | 87-B10-130-010 | | W-P,1.23-3.1-0.25 SLIT |
| 3 | 8Z-ZG1-201-010 | | CHAS ASSY,MAIN | 18 | 8Z-ZG1-221-010 | | LEVER,SW PLAY |
| 4 | 8Z-ZG1-248-010 | | PLATE,CTRG | 19 | 8Z-ZG1-218-010 | | LEVER ASSY,CAM |
| 5 | 8Z-ZG1-210-010 | | HLDR ASSY,CTRG | 20 | 87-B10-267-010 | | W-P,1.74-4-0.2 BLKSLIT W/O |
| 6 | 8Z-ZG1-209-010 | | SPR-T,LOAD | 21 | 87-ZG8-239-010 | | CAM,LOAD |
| 7 | 8Z-ZG1-206-010 | | PLATE ASSY,EJECT | 22 | 87-A90-605-010 | | HEAD,OWH RF325-74A |
| 8 | 8Z-ZG1-208-010 | | LEVER,LOAD | 23 | 8Z-ZG1-243-010 | | GEAR,IDLER |
| 9 | 87-B10-193-010 | | W-P,1.76-4.5-0.3 SLIT W/O ADH | 24 | 87-ZG8-242-010 | | GEAR,MOT |
| 10 | 8Z-ZG1-223-010 | | LEVER ASSY,LOAD M | 25 | 8Z-ZG1-226-010 | | GEAR,REDUCTION S |
| 11 | 8Z-ZG1-222-010 | | SLIDER,OPEN | 26 | 8Z-ZG1-225-010 | | GEAR,REDUCTION L |
| 12 | 8Z-ZG1-245-010 | | SPR-E,SL OPEN | A | 87-067-421-010 | | VTT+2-4 |
| 13 | 8Z-ZG1-216-010 | | PLATE ASSY,SLIDE R | B | 87-B10-131-010 | | VW+1.7-5 W/O MFZN2C |
| 14 | 8Z-ZG1-214-010 | | PLATE ASSY,SLIDE L | C | 87-B10-128-010 | | V+1.7-2 W/O MFZN2-C |
| 15 | 87-ZG8-232-110 | | SPR-E,SHUTTER | D | 87-B10-129-010 | | VTT+1.7-3.5 W/O MFZN2-C |

MD MECHANISM EXPLODED VIEW 1/1 (7ZG-3 A1)

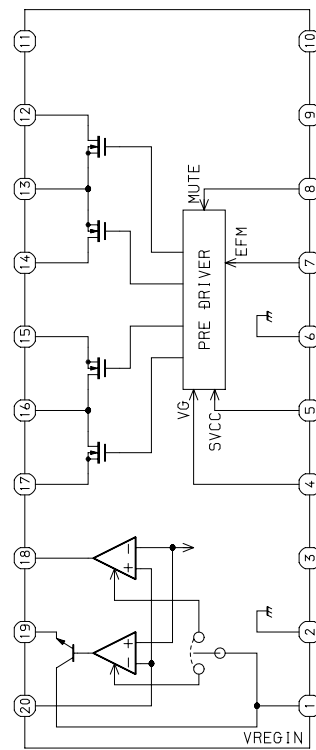


MD MECHANISM PARTS LIST 1/1 (7ZG-3 A1)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

| REF. NO | PART NO. | KANRI NO. | DESCRIPTION | REF. NO | PART NO. | KANRI NO. | DESCRIPTION |
|---------|----------------|-----------|-------------------|---------|----------------|-----------|--------------------------|
| 1 | 87-ZG3-219-010 | | CHAS ASSY (7ZG-3) | 11 | 87-ZG3-213-010 | | SPR-P, LEAD |
| 2 | 87-ZG3-214-010 | | SPR-T, SPINDLE-A | A | 87-261-547-310 | | V+2-3 BLK (1) |
| 3 | 87-ZG3-206-010 | | GEAR, A | B | 87-341-035-210 | | SCREW, UT1+2-6 |
| 4 | 87-ZG3-205-010 | | GEAR, MOT SL | C | 87-261-509-310 | | SCREW, V+1.4-4 |
| 5 | 87-ZG3-208-010 | | HLDR ASSY, MOTOR | D | 87-067-393-010 | | SCREW +1.4-1.4 |
| 6 | 87-A90-616-010 | | MOT, FF-N30VA | E | 87-261-503-310 | | PRECISION SCREW, V+1.4-2 |
| 7 | 87-ZG3-212-010 | | SHAFT, LEAD | F | 87-078-033-010 | | PW 1.2-2.5-0.25 SLT |
| 8 | 87-ZG3-211-010 | | SHAFT, GUIDE | | | | |
| 9 | 87-A91-444-010 | | PICKUP, KMS-260B | | | | |
| 10 | 87-ZG3-216-010 | | SPR-P, RACK | | | | |

IC, BA6417F



The block diagram illustrates the internal architecture of the AD7792, which includes an ADC (Analog-to-Digital Converter) and a DAC (Digital-to-Analog Converter). The ADC section consists of two parallel channels, each with an analog front-end circuit, a delta-sigma modulator, and a decimation & low cut filter. The DAC section consists of two parallel channels, each with an analog low-pass filter, a multi-level delta-sigma modulator, and an interpolation filter with x8 oversampling. The ADC and DAC are connected to a serial interface, which is also connected to a mode control interface. The power supply and clock inputs are shown at the bottom, with pins 22, 24, 23, 1, 2, 13, 14, and 9 labeled. The output pins are labeled 10, 11, 15, 12, 16, 18, 17, 7, and 8.

REFERENCE NAME LIST

ELECTRICAL SECTION

| DESCRIPTION | REFERENCE NAME |
|-------------|--------------------|
| ANT | ANTENNAS |
| C- | CHIP |
| C-CAP | CAP, CHIP |
| C-CAP TN | CAP, CHIP TANTALUM |
| C-COIL | COIL, CHIP |
| C-DI | DIODE, CHIP |
| C-DIODE | DIODE, CHIP |
| C-FET | FET, CHIP |
| C-FOTR | FILTER, CHIP |
| C-JACK | JACK, CHIP |
| C-LED | LED, CHIP |
| C-RES | RES, CHIP |
| C-SFR | SFR, CHIP |
| C-SLIDE SW | SLIDE SWITCH, CHIP |
| C-SW | SWITCH, CHIP |
| C-TR | TRANSISTOR, CHIP |
| C-VR | VOLUME, CHIP |
| C-ZENER | ZENER, CHIP |
| CAP, CER | CAP, CERA-SOL |
| CAP, E | CAP, ELECT |
| CAP, M/F | CAP, FILM |
| CAP, TC | CAP, CERA-SOL |
| CAP, TC-U | CAP, CERA-SOL SS |
| CAP, TN | CAP, TANTALUM |
| CERA FIL | FILTER, CERAMIC |
| CF | FILTER, CERAMIC |
| DL | DELAY LINE |
| E/CAP | CAP, ELECT |
| FILT | FILTER |
| FLTR | FILTER |
| FUSE RES | RES, FUSE |
| MOT | MOTOR |
| P-DIODE | PHOTO DIODE |
| P-SNSR | PHOTO SENSER |
| P-TR | PHOTO TRANSISTOR |
| POLY VARI | VARIABLE CAPACITOR |
| PPCAP | CAP, PP |
| PT | POWER TRANSFORMER |
| PTR, RES | PTR, MELF |
| RC | REMOTE CONTROLLER |
| RES NF | RES, NON-FLAMMABLE |
| RESO | RESONATOR |
| SHLD | SHIELD |
| SOL | SOLENOID |
| SPKR | SPEAKER |
| SW, LVR | SWITCH, LEVER |
| SW, RTRY | SWITCH, ROTARY |
| SW, SL | SWITCH, SLIDE |
| TC CAP | CAP, CERA-SOL |
| THMS | THERMISTOR |
| TR | TRANSISTOR |
| TRIMMER | CAP, TRIMMER |
| TUN-CAP | VARIABLE CAPACITOR |
| VIB, CER | RESONATOR, CERAMIC |
| VIB, XTAL | RESONATOR, CRYSTAL |
| VR | VOLUME |
| ZENER | DIODE, ZENER |

MECHANICAL SECTION

| DESCRIPTION | REFERENCE NAME |
|----------------|---------------------|
| ADHESHIVE | SHEET ADHESHIVE |
| AZ | AZIMUTH |
| BAR-ANT | BAR-ANTENNA |
| BAT | BATTERY |
| BATT | BATTERY |
| BRG | BEARING |
| BTN | BUTTON |
| CAB | CABINET |
| CASS | CASSETTE |
| CHAS | CHASSIS |
| CLR | COLLAR |
| CONT | CONTROL |
| CRSR | CURSOR |
| CU | CUSHION |
| CUSH | CUSHION |
| DIR | DIRECTION |
| DUBB | DUBBING |
| FL | FRONT LOADING |
| FLY-WHL | FLYWHEEL |
| FR | FRONT |
| FUN | FUNCTION |
| G-CU | G-CUSHION |
| HDL | HANDOL |
| HIMERON | CLOTH |
| HINGE, BAT | HINGE, BATTERY |
| HLDR | HOLDER |
| HT-SINK | HEAT SINK |
| IB | INSTRUCTION BOOKLET |
| IDLE | IDLER |
| IND, L-R | INDICATOR, L-R |
| KEY, CONT | KEY, CONTROL |
| KEY, PRGM | KEY, PROGRAM |
| KNOB, SL | KNOB, SLIDE |
| LBL | LABEL |
| LID, BATT | LID, BATTERY |
| LID, CASS | LID, CASSETTE |
| LVR | LEVER |
| P-SP | P-SPRING |
| PANEL, CONT | PANEL, CONTROL |
| PANEL, FR | PANEL, FRONT |
| PRGM | PROGRAM |
| PULLY, LOAD MO | PULLY, LOAD MOTOR |
| RBN | RIBBON |
| S- | SPECIAL |
| SEG | SEGMENT |
| SH | SHEET |
| SHLD-SH | SHIELD-SHEET |
| SL | SLIDE |
| SP | SPRING |
| SP-SCREW | SPECIAL-SCREW |
| SPACER, BAT | SPACER, BATTERY |
| SPR | SPRING |
| SPR-P | P-SPRING |
| SPR-PC-PUSH | P-SPRING, C-PUSH |
| T-SP | T-SPRING |
| TERM | TERMINAL |
| TRIG | TRIGGER |
| TUN | TUNING |
| VOL | VOLUME |
| W | WASHER |
| WHL | WHEEL |
| WORM-WHL | WORM-WHEEL |



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